

## REMARKS

### Allowable Subject Matter

Claim 62 has been indicated to be allowable if rewritten in independent form to include the subject matter of independent claim 1 from which it depends. The Applicant respectfully thanks the Examiner for this indication.

### Claim Rejections – 35 U.S.C. § 103

Claims 1-7, 10-11, 16-23, 29-31, 34, 43, 53, 58-61 and 63-64 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,217,578 to Crozet et al. in view of U.S. Patent No. 5,545,167 to Lin, claims 8, 9 and 12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Crozet in view of Lin and in further view of U.S. Patent Publication No. 2003/0114853 to Burgess et al., claims 13-15, 24-28, 37 and 38 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Crozet in view of Lin and in further view of U.S. Patent No. 5,976,135 to Sherman et al., and claims 35, 36, 54, 55 and 57 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Crozet in view of Lin and in further view of U.S. Patent No. 6,554,832 to Shluzas. Additionally, claims 39-42 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Crozet in view of Lin and in further view of U.S. Patent No. 5,501,684 to Schlapfer et al., and claims 44-46, 49, 51 and 52 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Crozet in view of Schlapfer.

### Claim Amendments

Claims 1, 3, 44, 46, 53 and 60 have been amended to recite further features associated with the claimed invention. Additionally, claim 65 has been added.

### Arguments in Support of Patentability

The seminal case directed to application of 35 U.S.C. §103 is *Graham v. John Deere*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). From this case, four familiar factual inquiries have resulted. The first three, determining the scope and content of the prior art, ascertaining differences between the prior art and the claims at issue and resolving the level of ordinary skill in the pertinent art, are directed to the evaluation of prior art relative to the claims of the pending application. The fourth factual inquiry is directed to evaluating evidence of secondary

considerations. See MPEP §2141. While performing this analysis, the cited references must be considered in their entirety, i.e., as a whole, including portions that would lead away from the claimed invention. See, MPEP §2141.02 (citing W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983)). From these inquiries, the initial burden is on the Examiner to establish a *prima facie* case of obviousness.

Additionally, the Supreme Court in the recent decision of KSR International Co. v. Teleflex Inc., 550 U.S. 398, 82 USPQ2d 1385, 127 S.Ct. 1727, 167 L.Ed.2d 705 (U.S. 2007), citing In Re Kahn, 441 F.3d 977, 988 (CA Fed. 2006), stated:

[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

KSR, 82 USPQ2d at 1396. For at least the following reasons, it is respectfully submitted that a *prima facie* case of obviousness has not been established in this case.

#### **Independent Claim 1 and Dependent Claims 2-31, 34-43 and 59-63**

As indicated above, independent claim 1 stands rejected as being unpatentable over Crozet in view of Lin. Without acquiescing in this rejection and in order to advance prosecution of the subject application toward allowance, independent claim 1 has been amended and now recites, in combination with other elements and features:

a first rod connector including a first shaft terminating in a first rod engaging portion and a lobe extending laterally from an end of said first shaft and displaced axially along said first shaft from the first rod engaging portion, wherein in a first orientation between said first rod connector and said interconnection element a portion of said first shaft and said lobe are slideably positionable within the first aperture such that said lobe passes through said first aperture and upon rotation of said first rod connector relative to said interconnection element from said first orientation to any other orientation said lobe prevents said first rod connector from being removed from said first aperture.

Support for the amendment to independent claim 1 is found, for example, in Figures 1 and 2 and paragraphs [0046], [0051] and [0057] of the published version of the subject application (i.e., U.S. Patent Application Publication No. 2004/0133203). For at least the reasons that follow, it is respectfully submitted that independent claim 1 is patentable over the cited references.

In responding to the Applicant's previous arguments regarding the rejection of independent claim 1, the Office Action asserts that Lin "teaches a lobe that must be rotated to fit and lock the end of a shaft through an aperture", and that the modification to Crozet "is being made to the aperture and the end of the shaft". (See pages 14-15). In view of these assertions, it appears the Office Action is suggesting a modification of Crozet including replacing the flange 62 on the arm 28 with the rectangular head 220 of Lin, and providing the bore 58 through the pivot element 44 with a rectangular configuration that corresponds to the rectangular configuration disclosed in Lin for holes 430, 530, 630 and 730 through components 400, 500, 600 and 700, respectively.

In contrast to the arrangement now recited in independent claim 1, even assuming arguendo that Crozet could be modified in the manner suggested in the Office Action, the resulting structure would not provide an arrangement where "said shaft and said lobe are slideably positionable within the first aperture such that said lobe passes through said first aperture and upon rotation of said first rod connector relative to said interconnection element from said first orientation to any other orientation said lobe prevents said first rod connector from being removed from said first aperture". Rather, in a first orientation between the rod gripping element 18 and the pivot element 44, the arm 28 having the rectangular shaped head would be positionable through the correspondingly shaped bore 58, but upon rotation of the rod gripping element 18 one hundred and eighty (180) degrees from the first orientation, the arm 28 would be removable from the bore 58. Thus, the suggested modification would not provide an arrangement where upon rotation of the rod gripping element 18 relative to the pivot element 44 from the aforementioned first orientation to any other orientation, the rectangular head would prevent the rod gripping element 18 from being removed from the bore 58. Accordingly, the cited references fail to account for the subject matter of independent claim 1 as a whole, and independent claim 1 is therefore patentable over the cited references for at least these reasons.

In addition to the foregoing, the Applicant maintains that the rationale required by KSR for modifying Crozet in the manner suggested in the Office Action is also missing. Indeed, in an apparent response to the Applicant's previous arguments in this regard, the Office Action now asserts "[i]n the modification of Crozet in view of Lin the examiner is substituting one mechanism for the other because they are functional equivalents that achieve the result of

passing a shaft through an aperture". (See page 14). It is respectfully submitted that this assertion still fails to provide any reasoning "that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" as required by KSR. KSR, 82 USPQ.2d at 1396. Indeed, without any sort of additional benefit or incentive, it is submitted that those skilled in the art would not have any reason to undertake a modification that involves substituting a functional equivalent for an existing structure. In fact, to do so would involve additional design time and resources while providing the same result. As a corollary, the current rationale advanced by the Office Action appears to turn logic on its side.

Furthermore, KSR instructs that the Examiner must make "explicit" this rationale of "the apparent reason to combine the known elements in the fashion claimed" (emphasis added), including a detailed explanation of "the effects of demands known to the design community or present in the marketplace" and "the background knowledge possessed by a person having ordinary skill in the art." Id. Despite these clear requirements of KSR, the Office Action has not provided any explanation of the effects of demands known to the design community or the other aspects outlined by KSR that would lead one skilled in the art to undertake the substitution of functional equivalents. Thus, in view of the foregoing, it is respectfully submitted that the rationale required by KSR to support the suggested modification of Crozet has not been provided. Accordingly, a *prima facie* case of obviousness has not been established with regard to independent claim 1 for this additional reason as well.

For at least the reasons set forth above, the Applicant submits that independent claim 1 is patentable over the cited references. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 1 and allowance of the same.

Claims 2-31, 34-43 and 59-63 depend either directly or indirectly from independent claim 1 and are submitted to be patentable for at least the reasons supporting the patentability of independent base claim 1, although further reasons support the patentability of these claims, including many of those previously submitted by the Applicant.

For example, claim 3 has been amended and now recites "wherein said first aperture extends from said upper portion positioned adjacent said stud to an oppositely positioned lower portion, said lower portion including a semi-circular configuration and said upper portion including a non-circular configuration". Support for the amendment to claim 3 is found, for

example, in Figures 1, 2 and 5 of the subject application. It is respectfully submitted that none of the cited references disclose the arrangement recited in claim 3. As illustrated in Figures 4A and 4B of Crozet, the lower portion of the bore of the pivot element 44 includes a curved surface positioned between a pair of linear surfaces. Moreover, in Lin the hole 530 includes a polygonal shaped upper portion and an oppositely positioned polygonal shaped portion with a circular portion positioned therebetween. Thus, in contrast to claim 3, neither the upper or lower portion of Lin includes a semi-circular configuration. Accordingly, it is believed that the subject matter of claim 3, as a whole, has not been accounted for by the cited references, and allowance of the same is respectfully requested.

Claim 60 has also been amended and now recites “wherein said stud has a longitudinal axis, and said first shaft has a longitudinal axis, and said stud longitudinal axis is oblique to said first shaft longitudinal axis when said fastener engages with said stud and fixes said first shaft relative to said interconnection element.” The Office Action indicates that the Crozet/Lin combination discloses these features because “the shaft can be askew in the aperture creating an oblique angle between the shaft and the stud”. (See page 15). Even assuming arguendo that this assertion is accepted, the Applicant notes that the axis 64 of the arm 28 cannot be askew or oblique to the axis 42 of pivot element 44 when the lock nut 52 is tightened and the assembly is locked. Accordingly, it is respectfully submitted that claim 60 is also patentable over the cited references for this additional reason.

**Independent Claim 44 and Dependent Claims 45, 46, 49, 51, 52 and 64**

As indicated above, independent claim 44 stands rejected as being unpatentable over Crozet in view of Schlapfer. Without acquiescing in this rejection and in order to advance prosecution of the subject application toward allowance, independent claim 44 has been amended and now recites, in combination with other elements and features:

an insert positioned over said stud having a lower surface with a concave portion configured to engage the first shaft of the first rod connecting member and an upper portion positioned in said first aperture of said second body; and a fastener extending through the first aperture of the second body and into an internal recess of the insert to fixedly engage the stud thereby securing the orientation of the first rod connector relative to the second rod connector.

Support for the amendment of independent claim 44 is found, for example, in paragraph [0075] and in Figures 14a and 14b of the published version of the subject application. For at least the reasons that follow, it is respectfully submitted that independent claim 44 is patentable over the cited references.

The Office Action asserts that Crozet discloses all the features of independent claim 44 “except for an insert disposed in the second aperture that encircles the stud and a fastener that extends through the first aperture and into an internal recess in the insert to fix the orientation”. (See page 13). However, the Office Action asserts that Schlapfer “discloses an insert [2] that is positioned in an aperture of a connection device and surrounds a stud and a fastener (fig 10, 11g) that extends through the first aperture and into an internal recess in the insert to allow for adjustments in all directions”. (See pages 14 and 15). In contrast to the arrangement now recited in independent claim 44, the clamping element 2 of Schlapfer fails to include a lower surface with a concave portion configured to engage the shaft of a rod connecting member. Rather, as illustrated in Figure 2 of Schlapfer, the lower surface of the clamping element 2 has a planar configuration. Crozet also fails to disclose an insert having these features. Accordingly, the Crozet/Schlapfer combination fails to account for the subject matter of independent claim 44 as a whole.

For at least the reasons set forth above, the Applicant submits that independent claim 44 is patentable over the cited references. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 44 and allowance of the same.

Claims 45, 46, 49, 51, 52 and 65 depend either directly or indirectly from independent claim 44 and are submitted to be patentable for at least the reasons supporting the patentability of independent base claim 44, although further reasons support the patentability of these claims.

For example claim 46 has been amended and now recites “wherein said slit intersects a portion of said concave portion of said lower surface”. Support for this amendment is found, for example, in Figure 14b of the subject application. In contrast to this arrangement, the slit 27 of the clamping element 2 of Schlapfer does not intersect a concave portion of the lower surface of the clamping element 2.

**Independent Claim 53 and Dependent Claims 54, 55, 57, 58 and 64**

As indicated above, independent claim 53 stands rejected as being unpatentable over Crozet in view of Lin. Without acquiescing in the current rejection and in order to advance prosecution of the subject application toward allowance, independent claim 53 has been amended and now recites, in combination with other features and elements:

a first spinal rod connector including a first shaft having a proximal portion received within said aperture and a distal end carrying a first spinal rod engaging portion configured to at least partially encircle a spinal rod, said first shaft having a projection at an end of said proximal portion, said projection being able to move through said aperture when said shaft is in a first orientation with respect to said aperture, and being unable to move through said aperture when said shaft is in all other orientations with respect to said aperture different from said first orientation.

Support for the amendment to independent claim 53 is found, for example, in Figures 1 and 2 and paragraphs [0046], [0051] and [0057] of the published version of the subject application. For at least the reasons that follow, it is respectfully submitted that independent claim 53 is patentable over the cited references.

For reasons similar to those discussed above with respect to claim 1, the Crozet/Lin combination fails to account for “said projection being able to move through said aperture when said shaft is in a first orientation with respect to said aperture, and being unable to move through said aperture when said shaft is in all other orientations with respect to said aperture different from said first orientation”. Additionally, for those further reasons discussed above in connection with independent claim 1, the rationale required by KSR for modifying Crozet to include the fastening mechanism of Lin is also missing.

For at least the reasons set forth above, the Applicant submits that independent claim 53 is patentable over the cited references. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 53 and allowance of the same. Claims 54, 55, 57, 58 and 64 depend either directly or indirectly from independent claim 53 and are submitted to be patentable for at least the reasons supporting the patentability of independent base claim 53.

## CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the subject application is now in condition for allowance with pending claims 1-31, 34-46, 49, 51-55 and 57-65.

Reconsideration of the subject application is respectfully requested. Timely action towards a Notice of Allowability is hereby solicited. The Examiner is encouraged to contact the undersigned by telephone to resolve any outstanding matters concerning the subject application.

Respectfully submitted,



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